Motor skill and Moral Virtue
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Virtue ethicists often appeal to practical skill as a way to clarify the nature of virtue.[1] An important commitment of a skill account of virtue is that virtue is learned through practice and not through study, memorization, or reflection alone. This commitment has its roots in the *Nicomachean Ethics,* where Aristotle's states that, "What we need to learn to do, we learn by doing; for example, we become builders by building, and lyre players by playing the lyre. So too we become just by doing just actions, temperate by doing temperate actions and courageous by courageous actions" NE 1033 a 32-b2.

The way in which most virtue ethicists explain the requirement to practice is by considering the way in which right actions or right responses to moral situations are learned or acquired. That is, most virtue ethicists hold something like the following view: learning which reaction or response to a moral situation is correct requires regularly performing the right actions in the right situations in childhood and beyond. This is because in order to know how to respond appropriately, one has to learn how to respond appropriately, and this is learned by regularly instantiating the appropriate actions in the appropriate situations, rather than, say, just thinking or reflecting on or deliberating about what the right action in that situation may be. In functionalist or cognitive science terms, we might say that virtue ethicists appeal to practice in order to explain how agents are able to select the appropriate output given a particular input.

In what follows, I will argue that framing things in this way only gives us half the story. In particular, I will argue that focusing on outputs, or on the right actions or responses to moral situations, ignores a crucial facet of moral expertise. Namely, that through practice, virtuous agents develop a cache of perceptual skills that allow them to attend to, detect, and identify the relevant features of a perceptual array, the selection of which is central to recognizing and categorizing a situation as a moral situation of a particular type. In order to support this claim, I will appeal to empirical studies in sports psychology, which show that an expert's capacity to attend to and recognize relevant perceptual inputs differs in important respects from the layperson's. Specifically, I will argue that performing the right action in the right circumstances improves an agent's ability to attend to, identify, and make predictions based upon the morally relevant features of a moral situation.

In the first section of this paper, I will consider four explanations given by virtue ethicists in order to justify the claim that virtue is acquired through practice. I

[1] See, for instance, Aristotle, *Nichomachean Ethics* (Oxford: Oxford University Press, 2009); J. Annas, *Intelligent Virtue* (Oxford: Oxford University Press, 2011); J. McDowell, *Mind Value and Reality* (Cambridge, MA: Harvard University Press, 2001); M. Stichter, 'Ethical Expertise: The Skill Model of Virtue', *Ethical Theory and Moral Practice* 10 (2007), 183 – 194; Stichter, M, 'Virtues, Skills, and Right Action', *Ethical Theory and Moral Practice* 14 (2011), 73-86.

will emphasize that each of these explanations focus almost exclusively on the selection of outputs and ignore how developing the right attention to and selection of inputs is relevant to a full account of virtue. In the second section of the paper, I will present evidence from sports psychology strongly suggesting that experts locate, attend to, recognize, and make predictions based upon the relevant features of domain-specific perceptual arrays in ways that significantly differ from non-experts. In section three, I will argue that if we take seriously the analogy between virtue and practical skill, then it is likely that performing virtuous actions tunes an agent's attention to the morally relevant features of an ethical situation. That is, I will claim that performing the right action, at the right time, in the right way, directed at the right person, etc., is required for an agent to develop the capacity to detect a situation as a moral situation, to classify it as a moral situation of the right type, and to make accurate predictions based on the features that one detects. I will end by providing some cursory remarks about the kind of perception that I propose may be involved in the selection of inputs by morally virtuous agents.

1. A look at the literature:

As we turn to the literature on virtue ethics, we don't need to look very far to see that most virtue ethicists focus almost exclusively on the way in which agents respond to ethical situations. That is, virtue ethicists (along with other ethicists) are concerned primarily with explaining how an agent is able to determine and do the right thing, given the particular moral context in which the agent finds herself. Not many theorists are concerned with accounting for how agents attend to or recognize a situation as a moral situation in the first place.[2] This seems to me to be an important oversight.

In the following section, I will present four examples of discussions where virtue ethicists focus on one side of the perception-action divide. To be clear, I will not attempt to provide a comprehensive overview of the literature but simply point to a few illustrative instances of the problem that I am attempting to identify.

1.a. virtue and "giving an account"

Julia Annas, like most virtue ethicists, holds that virtue is acquired through practice. She states, 'Aristotle is right here: virtue is like building in that learning to be brave is learning to do something, we learn by doing it (not just by reading books about it)'.[3] For Annas, while virtue is acquired by performing virtuous deeds, the performance of such deeds is by no means sufficient for virtue.[4] At the heart of Annas's account is a distinction between a subrational knack and a practical skill, of which virtue is an instance of the latter and simply performing virtuous actions is an

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[2] I will discuss exceptions to this generalization below. See especially: I. Murdoch, *Sovereignty of Good* (New York: Schocken Books, 1970) and L. Blum, 'Moral Perception and Particularity', *Ethics,* 101(1991), 701-725.

[3] Annas, *Intelligent Virtue,* 22-23

[4] 'From the start then, the child will learn by copying the role model…But this will not lead to bravery, as opposed to foolish repetition' (Annas, *Intelligent Virtue*, 23) and 'virtue cannot be adequately understood just as a disposition to perform actions: the virtuous person is a person whose actions are performed for certain reasons' (Annas, *Intelligent Virtue,* 28).

example of the former. For Annas, skilled agents not only have the ability to perform virtuous actions, that is, the right action, directed at the right person, at the right time, in the right circumstance but they also understand *why* that action is the right action in a particular set of circumstances. Possession of this understanding thereby allows the virtuous agent to provide an explanation of why a particular action is the right action in a given context.

As Annas explains, the virtuous agent has 'the ability to convey why what is done is done'.[5]

> Indeed, just this serves to mark off skill (*techne*) from an inarticulate 'knack; (*emperia*); the skilled person can 'give an account; of what he does, which involves being able to explain why he is doing what he is doing…that virtue has these features, and that they are centrally important to what virtue is, is one of the main claims of the book (Annas, p. 20).

For my purposes, the most important thing to notice about Annas's account is that moral expertise turns out to be exclusively about reactions or responses to moral situations. After all, both doing the right thing in a particular context and being able to explain why that action is the right action in that context address only the output side of moral agency. For Annas, virtue is a practical skill that does not seem to involve refining one's ability to attend to and identify the morally relevant features of a moral situation. As with so much of ethics, the input side of morality is taken as given.

1b. virtue and the particularity of right actions

A related suggestion for justifying the role of practice in moral expertise is that performing virtuous actions is required for the acquisition of virtue because identifying the right action cannot be articulated or organized into general principles. Rather, it is thought that virtue requires knowledge of what to do in particular situations, something that general rules or principles cannot capture.[6] As Daniel Jacobsen writes, 'the skill model implies that ethical expertise cannot be codified in principles'.[7] And as John McDowell explains,

> [T]here need be no possibility of reducing virtuous behavior to rules. In moral upbringing what one learns is not to behave in conformity with rules of conduct, but to see situations in a special light, as constituting reasons for acting; the perceptual capacity, once acquired can be exercised in complex novel circumstances, not necessarily capable of being foreseen and legislated for by a codifier of the conduct required by virtue, however wise and thoughtful he might be. [8]

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[5] Annas, *Intelligent Virtue,* 20.

[6] Likewise, Annas writes that, 'the need to learn does justice to the fact that virtues are always learned in particular embedded contexts' (Annas, *Intelligent Virtue,* 25).

[7] Jacobsen, D. '*Seeing by feeling: Virtues, skills, and moral perception', Ethical Theory and Moral Practice 8* (2005), 387-409.

[8] McDowell, *Mind, Value and Reality,* 85

We should notice that these accounts are concerned only with the impossibility of codifying rules for behavior or for translating reasons for action into general principles. That is, these accounts, like Annas's above, are concerned with the impossibility of giving general rules for selecting appropriate outputs. But even if it's true that the appropriate response to a given situation is impossible to codify into general principles, when it comes to moral expertise, this is only half the story.

Standard accounts of virtue do not address the possibility that there's likely another part of virtue that may be equally difficult or impossible to codify into general principles and that is also likely refined through practice—namely, the ability to detect, attend to, recognize, identify, and make predictions based upon the morally relevant features of a moral situation. Such attention to and identification of the morally relevant features of situations seems crucial for recognizing that one is confronted with a moral situation in the first place and also for categorizing or classifying that moral situation as a moral situation of a particular type. If this kind of identification and classification is necessary for moral expertise, as I will argue that it is, then we should conclude that accounts of virtue that focus primarily on outputs or responses to moral contexts, the nature of which is assumed to be given in one way or another, focus only on one half of what is required for a full account of moral virtue.

1c. Virtue as a sensitivity to reasons for action

Another suggestion for why practice is necessary for virtue comes from John McDowell.[9] According to McDowell, virtue amounts to a sensitivity to reasons for action.[10] On his view, this sensitivity or sensibility is akin to a perceptual capacity[11] but, importantly, it is not a perceptual capacity in the intuitionist sense. That is, the perceptual capacity that McDowell is concerned with is not a moral property or moral fact detector.[12] Rather, according to McDowell, the features that the ethical

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[9] J. McDowell, 'Virtue and Reason', *The Monist* 62 (1979), 331-350; J. McDowell, *Mind Value and Reality* (Cambridge, MA: Harvard University Press, 2001).

[10] 'So the deliverances of this sensitivity constitute, one by one, complete explanations of the actions which manifest the virtue. Hence, since the sensitivity fully accounts for its deliverances, the sensitivity fully accounts for the actions. But the concept of the virtue is the concept of a state whose possession accounts for the actions which manifest it. Since that explanatory role is filled by the sensitivity, the sensitivity turns out to be what the virtue is' (McDowell, 'Virtue and Reason', 332). See also, 'the position I am describing aims…at an epistemology that centres on the notion of a susceptibility to reasons' (McDowell, *Mind, Value and Reality,* 162).

[11] "The deliverances of a reliable sensitivity are cases of knowledge; and there are idioms according to which the sensitivity itself can appropriately be described as knowledge: a kind person knows what it is like to be confronted with a requirement of kindness. The sensitivity is, we might say, a sort of perceptual capacity" (McDowell, 'Virtue and Reason', 332).

[12] 'Moreover, the primary-quality model turns the epistemology of value into mere mystification. The perceptual model is no more than a model; perception, strictly so called, does not mirror the role of reason in evaluative thinking; which seems to require us to regard apprehension of value as an intellectual rather than a merely sensory matter. But if we are to take account of this, while preserving the model's picture of values as brutely and absolutely *there,* it seems we need to postulate a faculty—intuition—about which all that can be said is that it makes us aware of objective rational connections; the model itself ensure that there is nothing helpful to say about how such a

sensibility detects are reasons for action or ways of recognizing the demands that a situation places on us.[13] Such an ethical sensitivity is like a perceptual capacity insofar as it detects features of the world and, when it does, it delivers knowledge. So, on McDowell's view, as we develop virtue, we develop the capacity to see what action is called for in a particular situation. Insofar as this seeing is the detection of a reason, it also motivates one to perform the action that one sees as appropriate.

As with the cases above, McDowell emphasizes how an agent selects the appropriate outputs or responses to moral situations. The perceptual sensitivity that McDowell is concerned with delivers the ability to immediately sense what the right response to a given situation is. Importantly, this perceptual capacity is not identical to the ability to detect or identify features of moral situations. After all, on McDowell's account, detecting that a situation has some morally relevant features is not sufficient for making that situation a reason for action. This is clear since, as McDowell explains,

> If a genuine virtue is to produce nothing but right conduct, a simple propensity to be gentle cannot be identified with the virtue of kindness. Possession of the virtue must involve not only sensitivity to facts about others' feelings as reasons for acting in certain ways, but also sensitivity to facts about rights as reasons for acting in certain ways; and when circumstances of both sorts obtain, and a certain stance of the second sort is the one that should be acted on, a possessor of the virtue of kindness must be able to tell that that is so. So we cannot disentangle genuine possession of kindness from the sensitivity, which constitutes fairness.[14]

Now, it may be argued that a sensitivity to reasons for action requires a prior or simultaneous sensitivity to identifying and categorizing moral situations accurately—this seems reasonable and it's a position that I'll defend in section 3. However, for now, I'd like to highlight that accounting for how a sensitivity to moral situations develops is not equivalent to accounting for how a sensitivity to reasons for action develops. And it is the latter sensitivity that McDowell gives an account of. My aim is to develop a plausible account of the former.

1d. virtue as automatic response

A fourth reason that virtue theorists seem to have for holding that the acquisition of virtue requires practice and not just study or reflection is that the virtuous agent sees and does the right thing automatically. That is, the virtuous agent perceives what is required of her immediately, without having to consult rules or deliberate about general principles. So, though in the beginning stages of moral education, the virtuous agent is usually provided with general rules or heuristics that act as training wheels, through the process of acquiring ethical expertise, those general

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faculty might work, or why its deliverances might deserve to count as knowledge' (McDowell, *Mind, Value and Reality,* 132-3).

[13] 'In moral upbringing what one learns is not to behave in conformity with rules of conduct, but to see situations in a special light, as constituting reasons for acting; the perceptual capacity, once acquired can be exercised in complex novel circumstances…' (McDowell, *Mind, Value and Reality,* 85).

[14] McDowell, 'Virtue and Reason', 333.

rules fall away. What is left is an internalized framework that transcends general principles and allows the agent to respond effectively and automatically to both the nuance and novelty of particular moral situations.

As J. Jeremy Wisneiwski writes:

> through repeated exposure to situations that involve moral action, even when these situations initially involve deliberation and judgment, we can develop the ability to respond immediately to the situation we perceive. The situation becomes "unitized" or "chunked," and what once required cognitive effort becomes automatic and immediate. …This is perhaps just another way of pointing out that repeated experience matters—that we learn—but what we learn to do is sometimes to perceive immediately the essential nature of particular situations, and this can involve immediate recognition of the kind of action called for by the situation. [15]

And as Jacobsen writes,

> The novice is given some handy rules, such as: "think how you would feel if someone said that to you." As one learns to be kind, though, these heuristics eventually give way to something like a perceptual capacity. [16]

And Annas, too, agrees that this as relevant aspect of virtue: She writes

> [T]he reasons have left their effect on the person's disposition, so that the virtuous response is an intelligent one while also being immediate and not one that the person needs to consciously figure out.[17]

But as with the above considerations for why practice is required for the acquisition of virtue, what becomes automatic and immediate, according to these theorists, is the right response or the selection of the appropriate output in a moral situation. That is, the rules that a novice is given are rules about right actions. Accordingly, the proposal is that those rules are internalized in such a way as to guide, in a subtle and flexible manner, responses to particular, embedded moral circumstances. However, as we've already seen in previous examples, nothing is said about how practice develops automatic, perceptual skills for attending to and identifying moral situations in the first place. That is, the input side of selecting the morally relevant features of a moral situation is almost completely overlooked. And even when perceptual capacities are invoked, as they are by Wisniewski and Jacobsen, they are perceptual skills of the McDowell variety: that is, capacities to perceive appropriate responses.

Just to be clear, my claim here is not that the above accounts of virtue are incompatible with a view that emphasizes the importance of practice for acquiring the perceptual skills needed for selecting and identifying the morally relevant

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[15] J.J. Wisniewski, 'The case for moral perception', *Phenomenology and the Cognitive Sciences* 14(2015), 129-148.
[16] Jacobson, '*Seeing by feeling: Virtues, skills, and moral perception,* 393
[17] Annas, *Intelligent Virtue,* 30.

properties of particular situations. Rather, I am simply illustrating that standard accounts of virtue miss this feature of moral expertise and, as such, provide us with an incomplete picture of virtue and its acquisition. That is, by focusing on outputs or responses alone, standard accounts of moral expertise overlook the importance of practice in refining an agent's ability to select and identify appropriate moral inputs. Selecting appropriate inputs and identifying them veridically, as I'll argue below, is required if an agent is going to be able to respond to those inputs appropriately. After all, if one is unable to detect and categorize a situation as a moral situation in the first place, then it is unlikely that she'll be able to respond to that situation at all, never mind have the ability to respond to it appropriately.

2. Expertise and Motor Skill

In this section, I will present empirical evidence from sports psychology strongly suggesting that experts differ from non-experts in at least three ways when it comes to the selection of perceptual input: (1) experts and non-experts differ in the ways in which they attend to the same perceptual array, (2) Experts and non-experts recognize and thus recall different domain-specific patterns or properties of a perceptual array, and (3) experts and non-experts differ in the way in which they use information. That is, experts are able to use early visual cues to make quicker and more accurate predictions than non-experts.

The reason that these differences are important comes down to how seriously we want to take the analogy between virtue and practical skill. At the very least, it seems reasonable to hold that if virtue really is a kind of practical skill, then what studies of motor expertise prove is that experts select and organize inputs in categorically different ways from non-experts. This should force us think about how moral experts may attend, identify, and make predictions based on perceptual information in ways that differ significantly from those who lack moral expertise. In short, on the account that I am recommending, we need to take seriously the possibility that moral experts perceive the world differently from moral novices. This applies not only to expert decision-making or the selection of appropriate responses (the perception of affordances for moral action, one may say), but when it comes to the expert's abilities to detect, recognize, and categorize situations as moral situations in the first place. What I am suggesting is that experts and non-experts literally see the world differently and it is this difference that we must take into consideration of if we are to have a complete account of virtue.

2a. Expert attention

In examining the sports psychology literature on motor expertise, one feature that emerges across multiple domains and decades of research is that experts develop the capacity to effectively allocate attention for efficient information pick-up in ways that differ systematically from non-experts. Specifically, differences have emerged in the visual search strategies that experts employ when looking at a perceptual array. The plausible background assumption here is that looking to a particular location is importantly connected to attending to that location and retrieving information from the location where one looks. Before presenting the evidence from studies on motor skill and attention, I'd like to note that though attention is a

complex phenomenon, the way in which I am using the term here, very generally, is to refer to the cognitive process responsible for selection. That is, I am concerned with attention as a process of filtering or highlighting features or targets of an action space insofar as they that are relevant for guiding, controlling, or otherwise contributing to a task or activity.[18]

It's important to notice that attention can be very roughly divided into two kinds: top-down and bottom-up. As Wayne Wu explains, top-down attention is endogenously deployed; it is attention that 'can be intentionally directed as when one looks for a missing object' whereas bottom-up attention is stimulus-driven. It is 'attention that is captured as when a loud sound pulls one's focus to it'.[19] Though bottom-up attention may be relevant to expertise, at least insofar as one can conceive of an expert's attention being captured by an unexpected event or stimulus relevant for successful task instantiation while the novice fails to notice the same event or feature, the studies that I will consider below will be concerned with top-down attention. That is, the studies will consider how an agent, herself, directs her attention in various ways to the relevant features of a perceptual array. In what follows, I will sometimes refer to top-down attention as selective attention.[20]

Over the past three decades, evidence concerning motor expertise has converged on the fact that experts attend to sports-specific perceptual arrays in ways that differ in significant and systematic ways from the ways in which non-experts attend to the same stimuli. As Mann et al. write in their meta-analytic review, it has been found that 'experts differ from non-experts… on sport specific measures of attention allocation and information pick-up'.[21] Specifically, it has been found that experts employ fewer visual fixations than non-experts (*inter alia* they attend to fewer locations) and those fixations last for longer periods of time than the visual fixations of non-experts. As such, we can say that the selective attention of experts differs from that of non-experts along at least three dimensions: frequency, location, and duration.[22] [23]

Evidence of attentional differences between experts and non-experts has

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[18] W. Wu, *Attention* (New York: Routledge, 2014), 11.

[19] Wu, *Attention,* 11. More formally: 'S's attention to X is *top-down* if and only if S's attention to x involves the influence of non-perceptual psychological state/capacity for its occurrence" and "S's attention to X is *bottom-up* if and only if S's attention to X did not involve a non-perceptual psychological state/capacity for its occurrence' (Wu *Attention*, 30).

[20] Selective attention can be defined as: the 'preferential detection, identification and recognition of selected stimulations' (D.L. Woods, 'The physiological basis of selective attention: Implications of event related potential studies', in J.W. Rohrbaugh, R. Parasurasman and R. Johnson (eds.), *Event-Related Brain Potentials* (New York: Oxford University Press, 1990), 178.

[21] D. Mann, A.M. Williams, P. Ward, & C.M. Janelle, 'Perceptual-Cognitive Expertise in Sport: A Meta-Analysis', *Journal of Sport & Exercise Psychology* 29 (2007), 457-478, 459.

[22] Mann et al., 'Perceptual-Cognitive Expertise in Sport: A Meta-Analysis', 460

[23] In these studies, it is assumed that visual fixation is a sign of attention. For instance, as Just and Carpenter write: 'The more information which has to be processed, the longer the fixation duration.'(M.A. Just and P.A. Carpenter, 'Eye fixations and cognitive processes', *Cognitive Psychology* 8 (1976), 441–80). Though, not without its problems, this interpretation seems plausible. For problems see chapter 5 of A.M. Williams, K. Davids, and J.G. Williams, *Visual perception and action in sport* (New York: Routledge, 1999).

accumulated for decades. For instance, in studying basketball, Bard and Fleury[24] found that:

The eye movement data indicated that significantly fewer fixations were used prior to a response by expert basketballers (M = 3.3) than novices (M = 4.9). Also, differences were found in the distribution of visual fixations to selected areas of the display. Novices fixated primarily on a receiving team-mate when deciding to pass, while experts fixated additional sources of information such as the position of the nearest defender and the space available between the defender and basket.[25]

And when studying expert soccer players, the results of Tyldesley et al [26]

showed that the experienced players responded significantly faster than the inexperienced players to the soccer-specific stimuli. Moreover, visual search data revealed that when viewing a right-footed player strike the ball, the experienced players did not fixate on either the supporting leg or any part of the left side of the body. Their scanning behaviour was more structured and consistent than the novices with fixations being restricted to the right side of the body and the shooting leg.[27]

The above observations have been confirmed across a range of sports domains including basketball,[28]soccer,[29] fencing, and table tennis.[30] In sum, as Williams et al. write in their review of the literature on motor expertise and visual search:

Finally, many other studies have identified differences in visual search strategy using film-

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[24] C. Bard & M. Fleury, M. 'Analysis of visual search activity during sport problem situations', *Journal of Human Movement Studies* 3(1976), 214–22.
[25] Williams et al., *Visual perception and action in sport*, 157
[26] D.A. Tyldesley, R.J. Bootsma, & G.T. Bomhoff, 'Skill level and eye movement patterns in a sport orientated reaction time task', in H.Rieder, H. Mechling and K. Reischle (eds) *Proceedings of an International Symposium on Motor Behaviour: Contribution to Learning in Sport* (Cologne: Hofmann, 1982).
[27] Williams et al., *Visual perception and action in sport,* 158
[28] C. Bard, & L. Carriere, 'Etude de la prospection visuelle dans des situations problèmes en sports', *Mouvement* 10 (1975), 15–23; C. Bard, & M. Fleury, 'Analysis of visual search activity during sport problem Situations', *Journal of Human Movement Studies* 3(1976), 214–22; C. Bard. & M. Fleury, 'Considering eye movement as a predictor of attainment', in I.M. Cockerill & W.W.MacGillvary (eds) *Vision and Sport* (Cheltenham: Stanley Thornes, 1981); C. Bard, M. Fleury, & L. Carriere, 'La stratègie perceptive et la performance motrice: Actes du septième symposium canadien en apprentissage psychomoteur et psychologie du sport', *Mouvement* 10 (1976), 163–83.
[29] Tyldesley et al., 'Skill level and eye movement patterns in a sport orientated reaction time task'; W. Helsen, & J.M. Pauwels, 'A cognitive approach to visual search in sport', in D. Brogan and K. Carr (eds) *Visual Search* vol. II (London: Taylor and Francis, 1992); W. Helssen, & J.M. Pauwels, 'The relationship between expertise and visual information processing in sport', in J.L. Starkes and F. Allard (eds) *Cognitive Issues in Motor Expertise* (Amsterdam: Elsevier Science, 1993); A.M. Williams, & K. Davids, 'Eye movements and visual perception in sport', *Coaching Focus* 26 (1994), 6–9; C. Bard, Y. Guezennec & J.P. Papin, 'Escrime: Analyze de l'exploration visuelle', *Medicine du Sport* 15 (1981), 117–26; H. Hasse, & H. Mayer, 'Optische orientierungsstrategien von fechtern' (Strategies of visual orientation of fencers) *Leistungssport* 8 (1978), 191–200.
[30] H. Ripoll, H. 'Uncertainty and visual search strategy in table tennis', *Perceptual and Motor Skills* 68 (1989), 507–12.

based methods. For example, proficiency-related differences have been noted in tennis,[31] volleyball,[32] baseball, [33]and French boxing.[34] These studies have demonstrated differences in the allocation of fixations to selected areas of the display and, generally, have indicated some disparity in search rates between skill groups. [35]

It seems reasonable to interpret the above evidence in the following way: first, when it comes to understanding why experts fixate on fewer locations than non-experts, we can attribute this to the fact that experts know where to look. That is, experts know where the most rich and relevant sources of information in a perceptual array are to be found and, accordingly, they turn their attention directly to those areas. This allows experts to fix their attention to fewer places than novices who search for relevant information throughout a perceptual array and, as such, are less efficient in their capacity to allocate attention to only the most relevant visual locations for detecting task-relevant stimuli. In short, we can say that experts look to different locations than non-experts—experts look only to the most relevant, information-rich locations. And experts look to fewer places than non-experts, that is, they ignore the irrelevant or information-poor locations or features of domain-specific visual arrays.[36]

Further, once experts have developed efficient search strategies, focusing their attention only on the most relevant perceptual locations given their aims, they also spend more time looking at those locations. That is, expert visual fixations have been found to be, in general, longer than non-expert visual fixations.[37] It seems reasonable to interpret this fact as indicating that experts fixate for longer so that they can pick-up more information from those task-relevant, information-rich areas.

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[31] R.N. Singer, J.H. Cauraugh, D. Chen, G.M. Steinberg, S.G. Frehlich, & L. Wang, 'Training mental quickness in beginning/intermediate tennis players', *Sport Psychologist* 8 (1994), 305–18; M. Fleury, C. Goulet & C. Bard, 'Eye fixations as visual indices of programming of service return in tennis', *Psychology of Motor Behaviour and Sport* (Champaign IL: Human Kinetics, 1986); C. Goulet, C. Bard, & M. Fleury, 'Expertise differences in preparing to return a tennis serve: A visual information processing approach', *Journal of Sport and Exercise Psychology* 11 (1989), 382–98; V. Ritzdorf, 'Antizipation in sportspiel-dargestelt am beispiel des tennisgrundschlangs' (Anticipation in sport: investigation of the tennis ground stroke), *Leistungssport* 13 (1983), 5–9.

[32] C. Handford, & A.M. Williams, 'Expert-novice differences in the use of advance visual cues in volleyball blocking' *Journal of Sports Sciences* 9(1992), 443–4; A. Neumaier, 'Untersuchung zur funktion des blickverhaltens bei visuellen wahrnehmungsprozessen im sport' (An investigation of the function of looking in visual perception processes in sport), *Sportswissenschraft* 12 (1982), 78–91; H. Ripoll, 'Analysis of visual scanning patterns of volleyball players in a problem solving task', *International Journal of Sport Psychology* 19 (1988), 9–25.

[33] M.D. Shank, & K.M. Haywood, 'Eye movements while viewing a baseball Pitch', *Perceptual and Motor Skills* 64 (1987), 1191–7.

[34] H. Ripoll, Y. Kerlirzin, J.F. Stein, & B. Reine, 'Analysis of information processing, decision making, and visual strategies in complex problem solving sport situations', *Human Movement Science* 14 (1995), 325–49.

[35] Williams et al., *Visual perception and action in sport*, 166

[36] For further support for the claim that expert perceptual skills are domain-specific, see section 2b below.

[37] Mann et al., 'Perceptual-Cognitive Expertise in Sport: A Meta-Analysis'

As such, we see that experts are extracting more information from the task-relevant areas of a visual presentation than their non-expert counterparts.

It seems that these features of expert attention and perception are likely relevant for feeding into the successful follow-on processes of decision-making and action selection that experts employ. Presumably, these processes are relevant not only in allowing the expert more time for decision-making (because visual fixation is efficient) but also for providing the expert with the information she needs for selecting an appropriate response (because visual fixation is effective).

These finding are doubly important because they apply across skills and domains of expertise.[38] That is, at least when it comes to motor skill, it appears that 'all contexts require athletes to focus attention on the most appropriate cues so as to perform effectively'.[39] And what the studies on selective attention show, very generally, is that the 'skilled performer knows the important information within the display and can focus attention on relevant and ignore irrelevant sources of information'.[40] Though the skilled performer excels only within her domain of expertise, across domains, the differences between experts and non-expert in sport are more or less consistent.

These differences in the attentional capacities of experts and non-experts are instructive since it seems at least possible that we'll be able to generalize from motor expertise in particular to expertise in general. Surely, this kind of extrapolation requires empirical support, but if one thinks, as the virtue ethicist does, that virtue is a species of practical skill and we have seen consistently, across a wide-range of practical skills, that there are dramatic changes in a skilled athlete's ability to attend appropriately to domain-specific regions of a perceptual array, then it would seem reasonable to hypothesize that such a capacity develops in moral expertise as well.

2b. The identification/recognition of patterns

A second important difference between expert and non-expert input selection is reflected in the fact that experts are able to recognize and recall complex domain-specific perceptual patterns more quickly and effectively than non-experts. This is thought to be due to the experts superior abilities of encoding (organizing and storing) and retrieving (accessing) domain-specific information.[41] Studies in the "recall and recognition" paradigms have shown consistent differences in perceptual recognition and recall across a wide array of domains of expertise from chess to gymnastics, volleyball, basketball, American football, snooker, and others.[42]

The seminal study in this paradigm was conducted by deGroot in 1965.[43] Studying chess players at various level of skill from Grand Master to club player, DeGroot showed that:

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[38] Though there are task relevant differences depending on the nature of the sport. See Mann et al., 'Perceptual-Cognitive Expertise in Sport: A Meta-Analysis' for more.

[39] Mann, et al, 'Perceptual-Cognitive Expertise in Sport: A Meta-Analysis', 458.

[40] Williams et al., *Visual perception and action in sport*, 32

[41] See Williams et al., *Visual perception and action in sport*

[42] See Williams et al., *Visual perception and action in sport*

[43] A. D. deGroot, *Thought and Choice in Chess* (The Hague, Netherlands: Mouton, 1955).

When chess masters were shown a game configuration for intervals of 5 to 10 seconds, they were able to recall the position of chess pieces almost perfectly from memory. In contrast, this ability dropped off very rapidly below the master level, from a recall accuracy of 93% to a value of 51% for club players.[44]

Of course, from this finding alone it is unclear which capacities expert chess players possess that non-experts lack. And based on this evidence alone, one might guess that Grand Masters have generally superior powers of perception or memory. However, this possibility was ruled out by Chase and Simon,[45] who improved on de Groot's study by including 'a control condition where chess pieces were arranged randomly on the board rather than in a structured fashion. In this condition, there were no differences between a Grand Master, A level and Club player'.[46]

What this shows, and what many studies in various domains have since replicated, is that the expert chess players possess neither superior perceptual nor mnemonic abilities. That is, Grand Masters are no better than novices at recognizing or recalling perceptual patterns, in general. Their superior skill comes from their ability to recognize and recall meaningful, chess-related configurations. As such, we can conclude that the superior memory of the Grand Master is domain-specific. That is, the Grand Master has domain-specific knowledge or skill that allows him to effectively encode and retrieve chess-related information more efficiently than more novice players. This is not a general skill that applies to perceptual pattern-recognition or recall at large.

From the recognition and recall paradigm alone, it is difficult to isolate where exactly the perceptual-cognitive advantage of the expert lies. That is, we can be certain that the advantage is domain-specific, but it is unclear whether the domain-specific superiority is in information retrieval or in information encoding or in both. Sports scientists usually interpret the results as indicating more efficient encoding and retrieval (as I do above).[47] As Williams et al. write in their review of the recall and recognition studies:

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[44] Williams et al., *Visual perception and action in sport*, 98

[45] W. G. Chase, & H.A. Simon, 'The mind's eye in chess', in W.G. Chase (ed.) *Visual Information Processing* (New York: Academic Press, 1973a); W. G. Chase, & H.A. Simon, 'Perception in chess', *Cognitive Psychology* 4 (1973b), 55–81

[46] Williams et al., *Visual perception and action in sport*, 98

[47] For instance: 'It appears that skilled basketball players encode task-specific information to a deeper and more meaningful level, thus facilitating the recognition of particular patterns of play. Similar findings have been obtained in American football (D.J. Garland, & J.R. Barry, 'Cognitive advantage in sport: The nature of perceptual structures', *American Journal of Psychology* 104 (1991), 211–28), gymnastics (C.H. Imwold, & S.J. Hoffman, 'Visual recognition of a gymnastics skill by experienced and inexperienced instructors', *Research Quarterly for Exercise and Sport* 54 (1983), 149–55), snooker (B. Abernethy, R.J. Neal, & P. Koning, 'Visual-perceptual and cognitive differences between expert, intermediate, and novice snooker players', *Applied Cognitive Psychology* 8 (1994), 185–211), and soccer (A.M. Williams, K. Davids, L. Burwitz, J.G. & Williams, 'Visual search and sports performance', *Australian Journal of Science and Medicine in Sport* 22 (1993), 55–65; A.M. Williams, & K. Davids, 'Declarative knowledge in sport: a byproduct of experience or a characteristic of expertise?', *Journal of Sport and Exercise Psychology* 17(1995), 259–75)' Williams et al., *Visual perception and action in sport*, 98

Findings showed that experts are able to take in more information in a single glance than less skilled players because their knowledge allows them to chunk or group information into larger and more meaningful units. Grouping the discrete stimuli in this manner can result in emergent features that are not evident if the stimuli are viewed in isolation. That is, their ability to chunk items (i.e. players' positions) into larger and more meaningful units (i.e. patterns of play) enables them to recognise a developing pattern of play early in its initiation, thus facilitating anticipation.[48]

This interpretation seems reasonable since in the absence of a generally superior memory capacity it would seem that the way in which information is encoded is key to making it easily accessible for retrieval. Further, given the systematic difference in visual fixation that I reviewed in the previous section, it seems unlikely that the novice encodes and stores the same information as the expert but only fails to recall it. This is doubly unlikely since studies of perceptual learning show that with training and practice, individuals become able to detect perceptual patterns that are unitized into meaningful components.[49] For instance, with training, the radiologist detects patterns of visual information that the layperson misses.[50] And the skilled reader becomes able to perceive words and not simply letters on a page. For example:[51]

> Aoccdrnig to a rseearch sduty at Cmabrigde Uinervtisy, it deosn't mttaer in waht oredr the ltteers in a wrod are, the olny iprmoetnt tihng is taht the frist and lsat ltteer be in the rghit pclae. The rset can be a toatl mses and you can sitll raed it wouthit porbelm. Tihs is bcuseae the huamn mnid deos not raed ervey lteter by istlef, but the wrod as a wlohe.

In short, training allows patterns to emerge that would otherwise remain undetectable to the unpracticed individual. As such, combining (1) the plausible assumption that the way in which information is stored effects the ease with which it is accessed with (2) evidence that expert's attend to perceptual arrays in ways

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[48] Williams et al., *Visual perception and action in sport*, 99

[49] For a recent review of visual perceptual learning, see: Z. Lu, H. Tianmiao, C. Huang, Y. Zhoue, & B.A. Dosher, 'Visual Perceptual Learning', *Neurobiology of Learning and Memory* 95(2011), 145–151

[50] See, for instance: P. Snowden, I. Davies, & P. Roling, 'Perceptual learning of the detection of features in X-ray images: A functional role for improvements in adults' visual sensitivity?', *Journal of Experimental Psychology: Human Perception and Performance* 26(2000), 379-390; and B. Parolini, G. Soardi, G. & Panozzo, 'Do radiologists develop perceptual learning contrast sensitivity?' *Radiology Medicine.* 88(1994), 852-6.

[51] Georgetown University Medical Center, 'After learning new words, brain sees them as pictures', *ScienceDaily* (2015), <www.sciencedaily.com/releases/2015/03/150324183623.htm>

that are systematically different from non-experts and adding (3) evidence that through perceptual learning, individual's refine their capacity to detect complex patterns or properties, it seems safe to conclude that experts differ from non-experts both in their ability to recognize various significant features or patterns of a domain-specific perceptual array and also excel at retrieving those relevant perceptual configurations from memory efficiently.

Returning to virtue, as above, if we want to take the parallel between practical skill and virtue seriously, then it seems that we should attribute to the moral expert the capacity to recognize and recall perceptual features or patterns that remain undetectable to the layperson. This may go for recognizing that one is in a moral situation in the first place, for instance, recognizing that one is encountering injustice or wrongdoing of some kind or other. Or it may go for detecting and identifying that one is in a moral situation of a particular type, for instance, encountering a situation of racism or sexism. Or, perhaps, it may contribute to the recognition and classification of a moral situation by allowing one to recognize various morally relevant properties, for instance, that a person is in pain or discomfort. The latter interpretation is the one I favor and about which I will say more below. For now, we should simply keep in mind that because recognizing and categorizing situations seems relevant for influencing follow-on deliberation and appropriate response selection, it would behoove us not to overlook this important stage of moral expertise.

2c. Experts and early detection of perceptual cues

A third distinction between experts and non-experts that becomes apparent when reviewing the literature on motor expertise is that experts are able to use earlier perceptual cues than non-experts in order to anticipate the movements or actions of sport-relevant objects and persons. Studies across the board have shown that experts are quicker at detecting various sport-specific movements and more accurate at predicting the results of those movements. An illustrative example recounted by Williams, et al. reveals the expert capacity to detect and use early cues in tennis. In any early study,

> Jones and Miles (1978)[52] initially used this paradigm to investigate whether tennis players and non-players could successfully anticipate the direction of an opponent's serve. Three different temporal occlusion periods were used: 336 ms after the impact of the ball on the racket (condition A), 126 ms after impact (condition B) and 42 ms before impact (condition C). Subjects included county or international tennis players, club level players and undergraduate students with no tennis experience. Subjects reported their perceptual predictions by indicating where they thought the ball would land on a diagrammatic representation of the service court area which was divided into three sections. The results showed that there were significant differences between the players and non-players in conditions B and C, whilst no differences were found in condition A… Differences between groups were greater in condition C, when more potential information was withheld. Furthermore, the results indicated that the players scored significantly better than chance (i.e. 33.33% success rate) in condition C, signifying that skilled tennis players are able to effectively use information available

[52] C.M. Jones, & T.R. Miles, 'Use of advance cues in predicting the flight of a lawn tennis ball', *Journal of Human Movement Studies* 4 (1978), 231–5

prior to ball/racket impact in the tennis serve.[53]

The capacity to rely on early cues has been widely established in a wide variety of sporting domains. As Mann et al. write:

> Both temporal and spatial occlusion techniques have been employed to systematically demonstrate expert/nonexpert differences in the use of information presented early in the visual display across a variety of sports, including tennis, badminton, squash, cricket, baseball, and volleyball.[54] A summary of these experiments suggests that (1) experts are better able to predict the direction and force of an opponent's stroke based on kinematic information that maintain subtle clues (such as the dominant arm of a tennis player)[55] and (2) experts are more adept than nonexperts at using early flight cues to predict the ball's end location. These findings have been relatively consistent, signifying the attunement of expert-level performers to advance cues otherwise neglected by nonexpert performers[56].[57]

When we return to thinking about virtue as a kind of practical skill, then it becomes clear that the early and accurate detection of morally relevant cues will be important for responding appropriately to situations in real time. In sport, 'perceptual anticipation is essential… because inherent limitations in the performer's reaction time and movement time would result in decisions being made too late to provide an effective counter'.[58] Though some moral situations are such that time-pressure exerts very little force (i.e., correcting a historical wrong-doing), others require, like in sport, 'thinking on one's feet' or reacting on the spot.

As an example of the kind of situation that requires a real-time response, we can think of something familiar to us all: sitting in a café or restaurant or bar and overhearing someone being verbally abused. Let's say that the appropriate response to this situation is to intervene on behalf of the less powerful individual.[59] If this is the right response, then one has to implement it in a timely manner. One cannot

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[53] Williams et al., *Visual perception and action in sport*, 106

[54] B. Abernethy, & D.G. Russell, 'Expert-novice differences in an applied selective attention task', *Journal of Sport Psychology* 9 (1987a), 326-345; B. Abernethy, & D.G. Russell, 'The relationship between expertise and visual search strategy in a racquet sport', *Human Movement Science* 6(1987b), 283-319; E. Buckolz, H. Prapavessis, & J. Fairs, 'Advance cues and their use in predicting tennis passing shots', *Canadian Journal of Sport Science* 13(1988), 20-30; J. Starkes, P. Edwards, P. Dissanayake, & T. Dunn, 'A new technology and field test of advance cue usage in volleyball', *Research Quarterly for Exercise and Sport* 66(1995), 162-167

[55] B. Abernethy, 'Expertise, visual search, and information pick-up in squash', *Perception* 19 (1990), 63-77; D.L. Wright, F. Pleasants, & M. Gomez-Meza, 'Use of advanced visual cue sources in volleyball', *Journal of Sport and Exercise Psychology* 12 (1990), 406-414

[56] Abernethy & Russell, 'Expert-novice differences in an applied selective attention task'; Buckolz, et al. 'Advance cues and their use in predicting tennis passing shots'; Jones & Miles, 'Use of advance cues in predicting the flight of a lawn tennis ball'

[57] Mann, et al, 'Perceptual-Cognitive Expertise in Sport: A Meta-Analysis', 463

[58] Williams et al., *Visual perception and action in sport*, 104

[59] See for instance, programs like Step Up (http://stepupprogram.org), which conduct 'bystander trainings' that provide individuals with the skills to able to intervene in difficult situations, when appropriate. See the Washington Coalition of Sexual Assault programs (http://www.wcsap.org/bystander-intervention-programs) for a list of bystander intervention programs.

wait around until after the two leave to do something. Or, for a situation that may hit closer to home: one may find oneself at a conference dinner where a senior academic is making racist or sexist or other off-color remarks to a table full of junior scholars. Or, one may find oneself at drinks where the keynote speaker is making sexual advances towards a younger colleague, who clearly looks uncomfortable with the attention (I know, in philosophy, never!). These situations not only call for intervention but the intervention needs to be implemented in a timely manner. In such situations, one doesn't have the luxury of going home, calling friends for advice, deliberating about all the options, and then reflecting some more. The particular situation calls for an appropriate response at that particular moment. As such, the better one is at using early cues for assessing and predicting the likely unfolding of events, the more time one will have for choosing an appropriate response and the more time this will leave one to implement one's decided course of action.

2d. Taking stock

To close, As Pylyshyn writes:[60]

[the] skill to direct attention in a task-relevant manner is documented in what is perhaps the largest body of research on expert perception—the study of performance in sports. It is obvious that fast perception, as well as quick reaction, is required for high levels of sports skill. Despite this truism, very little evidence of faster visual information processing has been found among athletes.[61] In most cases the difference between sports novices and experts is confined to the specific domains in which the experts excel—and there it is usually attributable to the ability to anticipate relevant events. Such anticipation is based, for example, on observing initial segments of the motion of a ball or puck or the opponents gestures.[62] Except for a finding of generally better attention-orienting abilities,[63] visual expertise in sports, like the expertise found in the Chase and Simon studies of chess skill, appears to be based on the nonvisual abilities related to the learned skills of identifying, predicting and therefore attending to the most relevant places.[64]

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[60] Z. Pylyshyn, *Seeing and Visualizing: It's not what you think* (Cambridge, MA: MIT Books, 2003).

[61] B. Abernethy, R. J. Neal, & P. Koning, 'Visual-perceptual and cognitive differences between expert, intermediate, and novice snooker players', Applied Cognitive Psychology 8 (1994), 185–211; J. Starkes, F. Allar, S. Lindley, & K. O'Rielly, 'Abilities and skill in basketball', *Special Issue: Expert-novice differences in sport*, *International Journal of Sport Psychology* 25(1994), 249-265

[62] B. Abernathy, 'Visual search strategies and decision-making in sport', *Special Issue: Information processing and decision making in sport*, *International Journal of Sport Psychology* 22(1991), 189-210; L. Proteau,(1992). 'On the specificity of learning and the role of visual information for movement control', in L. Proteau and D. Elliot (eds.), *Vision and Motor Control, Advances in Psychology* 85, 67-103 (Amsterdam: North-Holland, 1992).

[63] U. Castiello, & C. Umilta, 'Orienting attention in volleyball players', *International Journal of Sport Psychology* 23(1992), 301-310; P. Greenfield, P. deWinstanley, H. Kilpatrick, & D. Kaye, 'Action video games and informal education: Effects on strategies for dividing visual attention', *Special Issue: Effect of interactive entertainment technologies on development, Journal of Applied Developmental Psychology* 15(1994), 105-123; V. Nougier, H. Ripoll, & J. Stein, 'Orienting attention with highly skilled athletes', *International Journal of Sport Psychology* 20(1989), 205-223

[64] Pylyshyn, *Seeing and Visualizing: It's not what you think,* 85

Generalizing these findings to thinking about virtue as a practical skill puts pressure on the virtue ethicist to consider seriously how it is that moral experts detect and use relevant perceptual inputs in order to organize and understand the situations they encounter. Further, it is important to think about how moral experts use their abilities at identifying, categorizing, and predicting in order to facilitate the selection of the most appropriate response to an encountered moral situation. It seems to me that if the analogy between virtue and skill is going to be informative, then it is vital that this aspect of virtue be addressed. Of course, the virtue ethicist may double-down and claim that moral situations are presented to experts and novices alike and that the only difference is in the action selection or recognition of reasons for action. However, if this is the position that one chooses, then it must be acknowledged that the similarity between virtue and practical skill begins to break down. And it should also be acknowledged that moral perception would be a very strange kind of perception indeed, since even simple visual arrays admit of an infinite number of interpretations.[65]

3. Is the detection and identification of moral situations really important for virtue?

Though, for the most part, theorists have overlooked the importance of perceptual input selection, detection, identification and categorization for moral expertise, there are a few exception who have made the case that moral perception, insofar as it is addresses how "a situation come[s] to have a particular character for a particular moral agent" is central to questions of ethics. This position was advocated by Iris Murdoch in *The Sovereignty of Good*[66] and it has since been defended by Lawrence Blum.[67]

Blum writes:

> Moral philosophy's customary focus on action-guiding rules and principles, on choice and decision, on universality and impartiality, on obligation and right action have masked the importance of moral perception to a full and adequate depiction of moral agency. An agent may reason well in moral situations, uphold the strictest standards of impartiality for testing her maxims and moral principles, and be adept at deliberation. Yet unless she perceives moral situations as moral situations, and unless she perceives their moral character accurately, her moral principles and skill at deliberations will be for nought and may even lead her astray. In fact, one of the most important moral differences between people is between those who miss and those who see various moral features of situations confronting them.[68]

The take-away point here is that even the best deliberator or decision-maker will not be a moral agent if she does not recognize the times at which she ought to deliberate, make decisions, or respond to a moral situation. That is, if one goes about one's life barely noticing when one is confronted with a moral situations then no amount of diligence in following principles (even internalized, automatic, situational

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[65] D. Marr, *Vision* (Cambridge, MA: MIT Books, 1982).
[66] I. Murdoch, *Sovereignty of Good* (New York: Schocken Books, 1970).
[67] L. Blum, 'Moral Perception and Particularity', *Ethics,* 101(1991): 701-725
[68] Blum, 'Moral Perception and Particularity', 701

ones) and no ability to articulate why a given action is the right action can be sufficient to guarantee that the agent will actually employ these principles or abilities in the situations in which they are called for. That is, if one does not have the capacity to detect that one is confronted with a moral situation and if one is unable to accurately identify the character of that situation when one is confronted with it, then even the most astute moral deliberator will not be able to respond appropriately to that moral situation.

To see how ubiquitous the need for accurate perception of moral situations is, we can look to the following mundane situation that Blum introduces:

> John and Joan are sitting riding on a subway train. There are no empty seats and some people are standing; yet the subway car is not packed so tightly as to be uncomfortable for everyone. One of the passengers standing is a woman in her thirties holding tow relatively full shopping bags. John is not particularly paying attention to the woman, but he is cognizant of her.
>
> Joan, by contrast, is distinctly aware that the woman is uncomfortable. Thus, different aspects of the situation are "salient" for John and Joan. That is, what is fully and explicitly present to John's consciousness about the woman is that she is standing holding some bags; but what is in that sense salient for Joan is the woman's discomfort.[69]

One can see that even if one has internalized a more or less general principle that one ought to, when one can, offer help to someone who is in discomfort but one also lacks the ability to detect when another person is in discomfort then this kind of internalized principle, even if it is automatic and nuanced, will be useless. That is, if the appropriate response is not triggered by the identification of a matching situation, then one will not act morally. [70] After all, as Blum explains of Joan and John:

> the deficiency lies not only in[John's] failure to act. For we can contrast with John someone who does perfectly clearly perceive other people's discomfort but is totally unmoved by it: he simply does not care and this is why he does not offer to help. John, as I am envisioning him, is not callous and uncaring in this way. We can imagine him as someone who, when other's discomfort is brought to his attention, is as sympathetic and willing to offer help as a person of average moral sensitivities. His failure to act stems from his failure to see (with the appropriate salience), not from callousness about other people's discomfort.[71]

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[69] Blum, 'Moral Perception and Particularity', 703

[70] The same goes if we think of the capacity developed through learning and training as a refined sensitivity to reasons for action—that is, a sensitivity capable of distinguishing when it is right to and when it is not right to take steps in alleviating another person's discomfort. That is, if one has the ability to distinguish which reasons are legitimate reasons for action and which are not but one has not developed the ability to detect and identify when those reasons obtain, then one will not be poised to engage in moral situations appropriately.

It seems to me that McDowell's theory is the closest theory to getting this right—since we can naturally find a place for attending, recognizing and identifying moral situations on his account. Nevertheless, the features that one becomes sensitive to in order to detect moral situations and how that sensitivity develops needs to be added to the account that McDowell presents.

[71] Blum, 'Moral Perception and Particularity', 704

I take it that we all know this kind of person: the one who doesn't notice things that she should and then apologizes profusely for not doing the right thing. In some ways, I have to admit that I find this person even more infuriating than the individual that just doesn't care. This is because, somehow, this 'John' kind of person has let himself off the hook for being aware of what's going on around him but feels totally secure in his moral standing—that he *would* do the moral thing, had he noticed. Clearly, however, noticing the right things, that is, being sensitive to the right features of the world, is central to being a moral agent in the first place. In this way, moral education and moral virtue requires agents not only that one do the right thing, if one notices that that thing is required, but to pay attention properly: to become aware of one's own surroundings, to notice others, to be properly engaged with the world. Without this kind of attunement, without the proper situational awareness real moral virtue is unattainable.

Another facet of detecting and identifying moral situations that seems relevant for moral expertise is identifying moral situations accurately. It seems clear enough that if one is confronted with a situation that one identifies as having morally-relevant features of S experiencing fear (let's say, as the result of another's speech acts) when in fact the situation is one in which S is experiencing humiliation then when one responds to this situation (let us suppose that the situation warrants a response), it will be very difficult to respond appropriately. After all, the proper reaction to a person who has been made to feel fear, presumably, is different from the proper reaction to a person who has been humiliated. As such, once again, we see that identifying and categorizing moral situations appropriately is crucial for responding to those situations appropriately. In this way, we see a natural parallel in moral expertise to the recognition and recall paradigm of motor skill discussed above.

Lastly, it appears to be a straightforward constraint on moral expertise that the virtuous agent not only act when a response is warranted and act in the right way, but also, act at the right time.[72] The early detection of morally relevant cues is implicated in this latter requirement. This should be obvious since, as I indicated above, there is at least an important set of moral situations (arguably, *the* most important set of moral situations), which involve real-time responses. They require saying or doing the right thing *en situ.* This may require intervention on behalf of a more vulnerable individual or, for instance, signaling that certain speech acts or behaviors are unwelcome and will not be tolerated. Such intervention and early signaling require predicting another's intentions and responding before a harm has been committed. In this way, early detection of cues is central to moral expertise. That is, detecting in advance the likely unfolding of a potentially volatile situation gives one the opportunity to diffuse that situation before it occurs. And, surely, having the ability to avoid or minimize potential harm must be an important feature of moral skill.

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[72] Think of Aristotle on virtue here: 'To be virtuous is 'to feel [passions] at the right times, with reference to the right objects, towards the right people, with the right motive, and in the right way'(Aristotle, *Nichomachean Ethics,* 1106b, 21-23).

As such, we can find a natural place for attending to, identifying, and making predictions based upon relevant moral features of a situation in our theory of moral expertise. By considering, in a holistic way, what is required for moral action, we can see that accurate input selection is required for moral agency. Further, given the empirical evidence from sport psychology, we now have a framework for thinking about how perceptual skills relating to attention, pattern recognition and identification, and early detection of perceptual cues might be relevant for moral expertise. This means that we not only have reason to think that the selection of perceptual input is central to moral action but we also have reason to think that the development of perceptual skills is the result of practice.

4. Some important clarifications and directions for future research

Of course, moral expertise, even if it is a practical skill, will differ from motor expertise in all sorts of ways. In this section, I will forward some cursory suggestions for how one ought to think about the kind of perception involved in the selection of relevant inputs for moral expertise, and the kinds of features that this perception detects. This section is meant to be a preliminary indication of how a theory of moral expertise might develop and not a complete theory in itself. It strikes me that the below proposals are worth refining and pursuing to see if their initial plausibility can withstand scrutiny.

One difference between motor expertise and moral virtue that has likely already alerted itself to the reader is that in studying sporting skill and input detection, the above studies focus almost entirely on visual perception: they measure visual fixation, duration, eye-gaze, etc. One worry, then, is the sensory modality of perception that is studied in motor expertise may not translate easily or straightforwardly to moral expertise. After all, though vision is likely relevant for the detection and identification of many moral situations, it is by no means necessary or sufficient. It is clear that, on the one hand, a visually blind individual need not be morally blind and, on the other, perfect vision does not guarantee accurate moral perception—a child may have 20/20 vision and still fail to detect the relevant features of a moral situation.

That said, it does seem that various kinds of sensory perception will be relevant for detecting moral situations. For example, visually perceiving a particular facial expression or gesture often bears on the proper detection and identification of moral situations. And the same goes for audition; for example, hearing a particular tone of voice or decibel level of speech is often important for the detecting and identifying the unfolding moral situation of a particular kind. However, as I noted above, moral perception is more than visual or auditory perception. I propose that we think of the detection, identification, and anticipation of morally relevant features as a kind of multi-modal perception. The primary sensory modalities may include vision or audition or touch (maybe others, too) but what makes moral perception different from more familiar kinds of perception is that moral expertise also typically involves emotional perception. This proposal is very much in line with recent theories in moral psychology, which insist that emotions play a central role in

moral judgments. Such theories have been advocated by philosophers such as Sean Nichols[73] and Jesse Prinz.[74]

According to Nichols, if we examine the geneology of norms and moral restrictions/principles, what we'll find is that those norms that are supported or accompanied by affect, are much more likely to persist. The basic implication of this anthropological/historical approach to morality is to show that emotions play a crucial role in the propagation and sustainability of morality. That is, the moral principles that we accept are very likely underpinned by an affective or emotional component. Moreover, it is this component that makes these principles effective either in encouraging or discouraging various kinds of behaviors such as helping and avoiding harm.

In a bolder proposal, Prinz argues that moral judgments not only involve or become sustained by emotions but that moral judgments simply are emotional attitudes. [75] In order to support this claim, Prinz appeals to, among other things, empirical evidence that emotions are both necessary and sufficient for moral judgments. In support of the necessity claim, Prinz appeals to studies of psychopathy. As Prinz explains,

> Psychopaths are the perfect test case for the necessity thesis, because they are profoundly deficient in negative emotions, especially fear and sadness. They rarely experience these emotions, and they have remarkable difficulty even recognizing them in facial expressions and speech sounds (Blair et al. 2001, 2002). Psychopaths are not amenable to fear conditioning, they experience pain less intensely than normal subjects, and they are not disturbed by photographs that cause distress in us (Blair et al. 1997). This suggests psychopathy results from a low-level deficit in negative emotions. Without core negative emotions, they cannot acquire empathetic distress, remorse, or guilt. These emotional deficits seem to be the root cause in their patterns of antisocial behavior.[76]

Importantly, empirical studies have shown that psychopaths are incapable of distinguishing moral from merely conventional principles. That is, 'Psychopaths treat the word 'wrong' as if it simply meant "prohibited by local authorities"'.[77] So, for example, a psychopath would treat a claim like 'killing innocent individuals is wrong' as if it were a judgment of the same nature as 'in setting a table, it is wrong to put the spoon to the left of the plate.' If we insist that being able to distinguish merely conventional rules from moral ones is essential to making authentic moral judgments then we should conclude that psychopaths are incapable of making moral judgments.[78] Further, since this inability to distinguish merely conventional from moral principles presumably stems from the emotional impairments characteristic of psychopathy, Prinz concludes that emotions are necessary for moral judgments.

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[73] S. Nichols, 'On The Genealogy Of Norms: A Case For The Role Of Emotion In Cultural Evolution', *Philosophy of Science* 69 (2002), 234-255

[74] J. Prinz, 'The Emotional Basis of Moral Judgments', *Philosophical Explorations* 9 (2006), 29-43; J. Prinz, *The Emotional Construction of Morals* (New York: Oxford University Press, 2007).

[75] Prinz, 'The Emotional Basis of Moral Judgments'

[76] Prinz, 'The Emotional Basis of Moral Judgments', 32

[77] Prinz, 'The Emotional Basis of Moral Judgments', 32

[78] As Prinz writes, 'Psychopaths acknowledge that their criminal acts are 'wrong' but they do not understand the import of this word' (Prinz,'The Emotional Basis of Moral Judgments', 32

To argue that emotions are sufficient for moral judgments, Prinz appeals to empirical evidence showing that an arbitrary emotional connection between a word like "often" and an emotional response of disgust can trigger a negative moral judgment or appraisal in individuals who have been hypnotized to associate the two. As Prinz explains, in their study,

> Wheatley and Haidt (2005) hypnotized subjects to feel a pang of disgust when they heard the emotionally neutral word 'often'. They then presented these subjects with vignettes that either contained the word 'often' or a synonym. Some of these scenarios describe morally reprehensible characters, but others describe characters who are morally admirable. Subjects who are hypnotized to feel disgust when they hear the word 'often' judge that the morally admirable characters are morally wrong when that word appears in the vignettes! This suggests that a negative feeling can give rise to a negative moral appraisal without any specific belief about some property in virtue of which something is wrong.[79]

Prinz goes on to generalize from the finding that the emotion of disgust has been shown to be sufficient for moral judgment to the claim that emotional attitudes, in general, are sufficient for moral judgments.

The position that I'd like to endorse here is more minimal than the one that Prinz recommends. I claim that the evidence above makes it clear that typical moral judgments involve an emotional component. However, I'd like to stop short of committing to the identity claim that Prinz endorses. This is because I see nothing wrong with allowing that certain moral judgments may be rooted in a purely rational basis and, as such, may lack an emotional component. So, for example, one may lack the emotional attitude of disgust even if one considers child marriage to be morally wrong. Moreover, I see nothing wrong with allowing that one may experience a certain emotional reaction and fail to form the typical moral judgment that corresponds to that emotion. One can think of a person raised in a racist culture trying to overcome her racism as an example of this. She may feel the emotions that usually cause racist judgments (disdain, disgust, etc.) but catch herself feeling those emotions and intervene so as not to form the typical judgment about the minority group member who has caused this reaction in her. We should notice that cases like these are not ruled out by the empirical evidence that Prinz uses to support his own view and, as such, I'd like to remain open to the possibility that such cases are possibilities. So, whereas Prinz insists that moral judgments just are emotional attitudes, I am relying on the evidence to support the more minimal but plausible position that moral judgments generally involve emotional attitudes.

Further, I see nothing in the above evidence that entails that we must accept that moral judgments are always nothing but emotional attitudes. As such, I'd like to admit that, typically, moral judgments involve an emotional component but keep open what seems to me both a plausible and attractive position that moral judgments also involve non-emotional components. For example, it seems likely that moral judgments also involve intellectual components that can be provided by a moral theory, a set of moral principles, or an understanding of moral concepts. It strikes me as likely that mature adults will often form moral judgments that have

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[79] Prinz, The Emotional Basis of Moral Judgments', 31

both emotional and intellectual components and that the intellectual component is not merely one that tracks the causal etiology of the emotional attitude involved in the moral judgment.

Despite this qualification, I believe that Prinz's position regarding the nature of emotional attitudes is illuminating and useful for the purposes of exploring moral expertise as a kind of refined emotional perception. According to Prinz, emotional attitudes are non-cognitive perceptions of bodily changes that are caused by certain events, actions or traits. Following Dretske,[80] Prinz claims that insofar as these bodily changes track certain determinate features of the world, they have representational content. That is, emotional states are non-cognitive perceptions of the body that represent those events, traits or actions that cause them. So, for instance, as Prinz offers, sadness is an emotional attitude that detects loss. And fear is an emotional attitude that tracks danger. Insofar as sadness is caused by loss and fear caused by danger, these emotions represent loss and danger. The representations that regularly cause bodily changes, on Prinz's account, are collected into mental files, or, more precisely, what he calls, 'calibration files'.

This way of thinking about emotional attitudes neatly allows for the refinement and development of emotional perception. This is because, according to Prinz, emotional perception is evolutionarily rooted but it is not fixed or brute. That is, emotional attitudes can be 'calibrated' to track the relevant features of the world more or less accurately. As Prinz writes, 'Calibration files contain a wide range of representations, both cognitive and non-cognitive, and these representations can change over the course of cognitive development'.[81]

In endorsing the view of emotional perception as a component of moral judgment, my claim is that as one practices performing the right actions, at the right time, directed at the right persons, etc. what one develops (at the very least) is a refined capacity to track morally relevant features of the world via emotional perception. That is, through practice, one develops emotional attitudes that are calibrated to the relevant moral features of a situation. Refined emotional perception of this kind gives us a natural way to think about the improvements in attention, identification, and prediction that come with moral expertise.

To end, by endorsing a view of moral judgment as typically involving an emotional component and by relying on Prinz's view of emotional attitudes as both non-cogntitive and representational states that can be calibrated, it should become clear how the detection and identification of morally-relevant inputs are refined, tuned, honed or calibrated through learning and development. Since we now have a way of conceiving of emotional perception as a kind of perception that can be refined through practice, this allows us to draw a parallel between motor skill and moral expertise. In motor skill, the ability to attend to, detect, locate, identify and make predictions on the basis of domain-specific visual features develops through practice and is central to motor expertise. Likewise, in moral skill, the ability to attend to, detect, locate, identify and make predictions on the basis of domain-specific emotional features of moral situations develops through practice and is

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[80] F. Dretske, *Explaining Behavior: Reasons in a World of Causes* (Cambridge, MA: MIT Press, 1988).
[81] Prinz, *The Emotional Construction of Morals*, 63

central to moral expertise. As such, we can draw a parallel between refining visual perceptual capacities in motor expertise and refining emotional perceptual capacities in moral expertise. And this, I hope, gives us a cursory way to frame the kinds of suggestions that I've been gesturing to throughout the paper.